CPI

Police And Public Safety Selection Report Technical Manual

First Edition

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Chapter 1

Background

Introduction

The CPI Police and Public Safety Screening Report is a specialized report designed to be used by licensed psychologists in conducting psychological evaluations of applicants for police and other public safety positions. The CPI Police and Public Safety Selection Report is based on the 434-item version of the California Psychological Inventory, which was first published in 1995 (Consulting Psychologists Press, 1996). This special report, which is based on a normative sample of more than 50,000 public safety job applicants, supplements the basic CPI instrument and its interpretive lore with a number of innovative features designed to improve the accuracy and fairness of employment screening decisions in the public safety field. These features include the following:

- Risk statements that estimate the likelihood that the applicant will demonstrate specific selection relevant problems.
- CPI scale profiles based on norms for public safety job incumbents, which allow the applicant's test scores to be compared to those of applicants who were subsequently hired and successfully held the job that the applicant is applying for.
- CPI scale profiles based on norms for public safety job applicants with the same gender and ethnicity as the current applicant, which allow the psychologist evaluating the applicant to rule out pertinent ethnic and gender determinants of scale scores.
- A list of individual "selection-relevant" CPI items endorsed by the applicant, indicating responses identified by a panel of expert psychologists, and by a research study on officer performance, that may be indicators of possible job performance problems.
- A summary list of CPI scales for which the applicant's scores are favorable or unfavorable indicators of the applicant's likely performance on specific job functions or job problem areas.

This manual presents information for both the novice and experienced employment selection psychologist in the proper use of this special report, including a detailed description of each of the special features listed above.

Professional Issues

Before choosing a psychological test to use as an aid in conducting pre-employment screening, a psychologist should investigate and understand the theoretical orientation of the test, the job functions expected of the applicant as they may be reflected in test results, the appropriateness of the standardization sample for the population to be screened, and the adequacy of the test's reliability and validity. This test manual is intended to provide a detailed explanation of how the CPI Police and Public Safety Selection Report addresses important professional issues confronting the selection psychologist.

To assist psychologists in the selection of an appropriate test for a specific assessment goal, the Handbook of Psychological Assessment (Groth-Marnat, 1997) identifies three major questions that should be answered about the norms used by any test chosen for psychological

assessment: (1) Is the standardization group representative of the population on which the examiner would like to use the test? (2) Is the standardization group large enough? and (3) Does the test have specialized subgroup norms to give the examiner greater flexibility and confidence if they are using the test with similar subgroup populations?

The CPI selection report described in this manual responds directly to these important questions. The report is based on norms derived from the pre-employment test data of thousands of previous applicants for public safety positions, who were subsequently hired and performed satisfactorily as job incumbents. This job incumbent data set is large enough that it has been used to create statistically reliable test norms for individual combinations of gender, ethnicity, and public safety job category. These test norms allow the report to create a "job incumbent comparison profile" for each new job applicant -- tailored to the applicant's gender, ethnicity, and job category applied for -- which compares the applicant's test data to the test data of similar applicants who subsequently became successful job incumbents. (Tables presented later in this manual describe the size and CPI scale characteristics of the samples used to create the job incumbent norms that are used in the report.)

Another professional issue that has long been debated by assessment psychologists is the relative merit of clinical versus actuarial prediction. While defending the value of the clinical approach to integrating data and arriving at assessment decisions, Groth-Marnat (1997) states emphatically that "…formal prediction rules can and should be used more extensively as a resource to improve the accuracy of clinical decision making." Consistent with this recommendation, the CPI Police & Public Safety Report contains a series of risk statements about the applicant's likelihood of being rated as "poorly suited" for the job being applied to, by psychologists with expertise in public safety selection; and the applicant's likelihood of exhibiting negative behaviors that are relevant to the job (such as inadequate anger management skills or poor job performance). These risk statements are generated from prediction equations that have been calibrated and cross-validated on large samples of previous applicants. For each risk statement criterion, the report also provides base rate data, so that the examiner has an idea of how frequently the behavior occurs in the applicant population.

In summary, this selection report based on the CPI has been designed to address many of the practical, legal and ethical issues confronted by psychologists conducting pre-employment evaluations of applicants to public safety positions, including police officer, firefighter/emt, corrections officer, communications/dispatcher and juvenile probation counselor.

Caveats

The CPI Police and Public Safety Screening Report is sold only to qualified professionals. Interpretation of the report requires familiarity with the CPI and an understanding of the information contained in this manual. The usefulness and validity of the CPI Police and Public Safety Screening Report is directly related to the knowledge and experience of the qualified professional who interprets this report. This report is not a replacement for professional knowledge and expertise.

Administration and scoring of the CPI, using the CPI Police and Public Safety Screening Report scoring software are straightforward and can be accomplished by personnel other than psychologists who have been trained in the administration of self-report measures to individuals and groups. In all cases, test administrators should be working under the supervision of a qualified professional, as defined in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999).

This special CPI-based screening report is a key element in the screening process for public safety officers. It is intended to serve as a professional-to-professional consultation, and should aid in the formulation of a selection decision. Hypotheses generated from this report

should be compared to other test data, a thorough review of the applicant's personal and occupational history, and a structured interview that focuses on job-relevant behaviors. It is inappropriate to make screening decisions based solely on the results of this report.

An Overview of the California Psychological Inventory

Harrison Gough published the first scales of what was to become the California Psychological Inventory (CPI) in 1948. Over the next few years, he and his colleagues derived additional scales, and, in 1956, Consulting Psychologist's Press (CPP) published the 18-scale CPI Form 480. It featured 18 folk scales derived from the 480-item set, following a very thorough construct-validation research program. Since then, the two fundamental aims of the inventory have been to (1) describe how ordinary people will be perceived by one another, and (2) predict how people will behave in a variety of social contexts.

The CPI rapidly became a valuable tool in a number of broadly different settings, such as business and organizational development, counseling, and employment selection, including law enforcement selection. Descriptively robust scales that are anchored in normal-range human behavior have made the CPI attractive to psychologists in industrial and organizational psychology settings (employment selection), as well as to practitioners in clinical settings (treatment and diagnosis). The CPI's relatively non-intrusive and inoffensive content seems to invite people to describe themselves accurately whether they respond to the CPI in a counseling or an employment selection setting.

Unlike the MMPI, the CPI was normed, validated, and intended for use in non-medical settings. It was added to law enforcement screening batteries as early as 1972 by the senior author because it was seen as the instrument of choice for describing the normal-range personality characteristics that play such an important role in how an applicant is likely to perform the essential job functions of the police officer position. Over the last 30 years, psychologists working in the law enforcement field have come to rely on the CPI as the test of choice for dealing with the suitability portion of their assessment work.

In 1987, the 480-item version of the CPI was revised to yield the CPI form 462. Gough added two more folk scales (Independence and Empathy) to this version of the instrument. He also added three structural or "vector" scales (v.1, v.2, and v.3), which are used to produce the now familiar CPI Type (Alpha, Beta, Gamma, and Delta) and Level (1-7) classifications that have become so useful for providing a descriptive overview of the test taker's interpersonal functioning. Type and Level distinctions among police and other public safety applicants have proven to be particularly useful to screening psychologists because of the direct overlap between the test characterizations, applicant self-reported negative behavior, and job performance requirements.

The current CPI revision, created in 1995, was undertaken in recognition of the fact that a high percentage of CPI users work in employment selection environments, and that recent legislation and litigation have presented significant obstacles to the use of conventional psychological tests, in their present form, for employee selection. This legislation and litigation includes Title VII of the 1964 Civil Rights Act, the Americans with Disabilities Act (ADA), and the 1991 Civil Rights Act.

The CPI Form 434 was designed for use in the employment selection environment. Working together with a panel of psychologists who are active in this specialty area, Gough and the staff at Consulting Psychologists Press reviewed every CPI item. After significant debate, 28 items were chosen for deletion from the CPI 462 to form the CPI Form 434. Most of the deleted items had content that was clearly medical in nature and could be viewed as violating the intent of ADA if the test were administered prior to a conditional job offer, despite the fact that none of these items singly or collectively was ever used to identify or diagnose medical or psychiatric

problems. Other items were omitted because they were judged to be too invasive for the selection setting or had content that was considered dated or sexist.

Although most of the 20 folk scales survived the item deletion intact or lost no more than 1 or 2 items, the Well Being scale lost 7 items, and the Intellectual Efficiency scale lost 5 items. In order to maintain both the original number of items and the reliability of each scale, Gough examined the relationship of each of the remaining 434 items to the underlying psychological constructs by re-computing correlation data between the new CPI Form 434 versions of the scales and the original construct validity ratings provided by spouses, co-workers, and trained psychologists. In this way, he was able to replace deleted items from affected scales with psychometrically equivalent items from the original item pool that is available for the 6,000 people in the new community normative sample. Thus, he was able to maintain the length and robust nature of all of the CPI scales without adding new items to the inventory. Subsequent analyses comparing the CPI scales in their new and old versions demonstrated correlations in the high .90's in the community normative sample (Gough, 1996), and in the public safety applicant sample (Roberts and Johnson, 1996). It is noteworthy that other recently "revised" tests sometimes used in selection were not re-validated against the original criteria used in their development despite significant changes in the item composition of their scales.

Report Objectives

The CPI Police and Public Safety Selection Report is designed to assist psychologists who are involved in the pre employment screening of police and other public safety job applicants, and in the evaluation of current public safety employees being considered for admission to a variety of special unit assignments (e.g., SWAT, Hostage Negotiation, Critical Incident Team). The principal contribution of the Report is to help the evaluator assess the psychological suitability of the applicant for the position in question.

In addition to determining that an applicant's traits, characteristics and past behavioral history make them suitable to perform the functions required by the job, psychologists who practice in the public safety selection area must also certify that the applicant meets a psychological stability standard. This mandate to certify emotional stability requires screening out applicants who display "job-relevant psychopathology," and some state laws (e.g., California, New Mexico, Michigan) reflect this standard that has become a de facto requirement for other states. (A state-by-state review of legislation requiring pre-employment psychological screening of police officers will be presented at the 2001 International Association of Police Chief's Conference in Toronto by Petersen, 2001.) Tests designed to measure psychopathology, such as the Personality Assessment Inventory (PAI) and Minnesota Multiphasic Personality Inventory-2 are particularly well suited to address this requirement for emotional stability. Despite the very low incidence of psychopathology among public safety job applicants, as reflected in the psychological test data, it is essential to use a recognized objective test of psychopathology during the post job offer phase of screening weapon carrying public safety officers, because it is clear that agencies believe psychologists will perform a certification of emotional stability based on objective testing, and because objective testing indicating stability would help avoid legal complications in the event of problem behavior by an incumbent employee who was certified "stable" during the screening phase.

In contrast to the stability orientation of the PAI or MMPI-2, the CPI is more useful in identifying traits that may interfere with, or enhance, an applicant's effective performance of specific job functions. This suitability focus of the CPI accounts for its central role in formulating selection decisions because its scale content is directly relevant to job requirements, and because the CPI Report's many features offset the difficult to interpret modal profiles usually produced by tests using community norms. The influence of community norms on job applicant profiles will be presented in detail in the "Testing Job Applicants" section of this manual.

This special selection report based on the CPI should be viewed as only *one* component of a comprehensive screening procedure that includes at least one other psychological test based on abnormal personality functioning, a comprehensive personal history questionnaire, and a structured interview focused on job-relevant behavior are also recommended. In addition to the CPI Report, the senior author and his colleagues routinely include, as part of the psychological screening evaluation, the Personality Assessment Inventory (PAI; Morey, 1990), the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1996), and the Psychological History Questionnaire (Johnson, Roberts, & Associates, 2001). In addition to these core measures, other instruments -- such as the Wonderlic Personnel Test (Wonderlic, 1992) -- are sometimes used when permitted by the referring agency agencies.

Regardless of the instruments used, the final screening decision should be based on corroborating information gathered from all data sources. In practice, this means reviewing all testing and personal history results prior to the interview, developing and refining hypotheses during the face-to-face interview with the applicant, and, when possible, examining the admissions made during the polygraph examination.

Appropriate Test Populations and Testing Environment

The CPI Police and Public Safety Selection Report is appropriate for individuals ages 18 years and older. The CPI items are written at a eighth-grade reading level. Additional reading level characteristics of the CPI items are provided in the CPI Professional Manual.

The CPI can be administered to individuals or groups. In both cases, the testing environment should be arranged to protect the privacy and confidentiality of each individual's responses. The testing environment should be relatively quiet, free from distraction, and adequately illuminated.

Normative Information

The applicant comparison profiles presented in the CPI Police and Public Safety Selection Report are based on normative data from a sample of 50,488 job applicants who applied for entry level positions at over 100 public safety agencies throughout the United States. Approximately 25% of the applicants applied to agencies in the Midwest, 32% applied to agencies on the East Coast, and 40% applied to agencies on the West Coast, with the remainder applying to agencies in various other portions of the country, including Alaska and Hawaii.

The applications were for five public safety positions: police officer, corrections officer, firefighter or emergency medical technician, communications dispatcher, and juvenile probation counselor. Table 1 contains the sample sizes for each of the five public safety positions covered by the report. Although a majority of the sample, 40,814 applicants, applied for the police officer position, the sample sizes for the remaining positions were also substantial, ranging from a high of 5,055 applicants for corrections officer to a low of 1,174 for communications dispatcher.

One of the profiles presented in the report is based on normative data for applicants who were subsequently hired and became successful incumbent officers in the job category to which the applicant is applying. Table 1 contains the sample sizes, for each of the five public safety positions covered by the report, for the sub-samples of applicants who became job incumbents.

(Note: In Table 1, the proportion of job incumbents to total applicants varies considerably from one position to another. These differences in proportions do not reflect corresponding differences in the selection ratios for the different job categories. In fact, the screen-to-hire ratio, for applicants who progress to the psychological evaluation, is approximately 50% for all five job categories. The differences among job categories in the incumbent-to-applicant proportions indicated in the table are due primarily to differences in the level of cooperation that employers in different job categories extended in providing us with hiring and job outcome information about their employees.)

Table 1

Size Of The Public Safety Job Applicant Normative Sample by Job Category, For All Applicants And Those Who Became Job Incumbents

Job Category	All Applicants	Applicants Who Became Job Incumbents
Police Officer/ Deputy Trooper	40,814	10,680
Corrections Officer	5,885	2,074
Firefighter/ EMT	1,399	326
Juvenile Probation Counselor	1,216	83
Communications Dispatcher	1,174	213
Total	50,488	13,376

Table 2 contains, for applicants in each of the five job categories, a summary of various characteristics, including gender, ethnicity, education, previous job experience, drug use, and criminal convictions. Most of this information was obtained from the Johnson, Roberts, and Associates Personal History Questionnaire, which was administered as part of the application process. As the table indicates, the applicants in the five job categories tend to have similar characteristics, although there are a few differences. In particular, applicants for communications dispatcher positions are the most likely to be female and the least likely to have been convicted of a crime. Applicants for firefighter positions are the most likely to be male. Applicants for corrections positions are the least likely to have completed college and the most likely to have been convicted of a crime. Applicants for juvenile probation counselor positions are the most likely to be college graduates, non-white, and bilingual.

One of the profiles in the report compares the applicant's CPI scores to normative data based on applicants of the same gender and ethnicity. This normative data is based on very large samples for all combinations of gender and ethnicity. Table 3 contains a breakdown of the total sample by gender and ethnicity. Although a majority of the normative sample, 26,774 applicants, were white males, the sample sizes for non-white categories of gender and ethnicity were also substantial, ranging from a high of 5,188 cases for African-American males to a low of 502 cases for Asian-American females.

Table 2

Characteristics Of The Public Safety Job Applicant Normative Sample, By Job Category

	Police Officer (N= 40814)	Corrections Officer (N = 5885)	Firefighter (N = 1399)	Communi-cations Dispatcher (N = 1216)	Probation Officer (N = 1174)
% Male	84	79	91	22	62
% Non-white	36	35	27	33	59
% High school graduate	97	92	98	96	99
% College graduate	28	12	25	19	66
% Fired from previous job	18	20	16	22	17
% Prior public safety experience	28	17	24	20	28
% Used marijuana > 20 times	4	5	5	7	9
% Used cocaine	9	6	12	15	12
% Ever arrested	26	35	22	14	24
% Convicted of a Crime	14	20	17	10	15
% Bilingual	19	12	20	17	32
Mean age	28	30	29	33	33
Mean Wonderlic score	20	21	26	25	22

Table 3

Composition Of The Public Safety Job Applicant Normative Sample, By Gender And Ethnicity

Group	N	%
Gender		
Male	41,042	81
Female	9,432	19
Missing/No answer	14	*
Ethnicity		
Caucasian (non-Hispanic)	32,212	64
African American	7,341	15
Hispanic	5,753	11
Asian	3,291	7
Other	1,532	3
Missing/No answer	359	1
Gender & Ethnicity		
Caucasian male (Non-Hispanic)	26,774	53
Caucasian female (Non-Hispanic)	5,433	11
African American male (Non-Hispanic)	5,188	10
African American female (Non-Hispanic)	2,152	4
Hispanic male	4,766	9
Hispanic female	987	2
Asian/Pacific Islander male	2,789	6
Asian/Pacific Islander female	502	1
Other/Missing/No answer	1,897	4
Total	50,488	100

Note: * indicates a percentage value < .5

Chapter 2

Validity Issues

Testing Job Applicants

Psychologists have long been aware that factors in the testing environment, such as the examiner's gender or ethnic background, influence the way a test-taker responds to a specific procedure. Similarly, it has been commonly observed (Butcher, 1989) that job applicants appear to respond to the validity and response distortion scales of objective personality tests in what is described as a "defensive" fashion. Early research estimated that defensiveness produced elevations resulting in test invalidity in less than 10% of job applicant profiles (Butcher).

A different picture has emerged, however, since the introduction of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) and its calculation of *T* scores based on a new community normative sample. Roberts, Tracy, Spielberger, and Johnson (2000) have reported that although only 8% of the MMPI-2 community sample obtained T scores of 65 or higher on the MMPI-2 Lie scale, and almost none of them exceeded a T score of 80, 60% of 6,388 applicants to a large urban police agency obtain T scores of 65 or higher on the MMPI-2 Lie scale, and approximately 20% exceeded the T score cutoff of 80 on the test. This level of defensiveness reflected in the test data for urban public safety applicants, when compared to general community norms, seems to be due in part to the impact of situational or "context" demands. Since minorities and females exceed traditional cutoffs at an even greater rate than whites and males, there is an additional concern that test results based on the MMPI-2 community norms (which included only 19 Asians and 79 Hispanics) could inadvertently contribute to a disparate impact on minority job applicants. It is noteworthy that recent research with airline pilot applicants (Butcher, Morfitt, Rouse, & Holden, 1997) produced similar levels of defensiveness on the MMPI-2 L and K scales, raising test validity concerns in 27% of applicants.

In addition to the marked elevations produced by applicants on validity scales used to assess "faking good" (such as the MMPI-2 *L* and *K* validity scales and Butcher's S scale, the CPI Good Impression (Gi) scale, the PAI Positive Impression Management (PIM) scale), test results for public safety job applicants also show a suppression of *T* scores on content and clinical scales when compared to community norms. These two interrelated departures from "normal" test-taking profiles produced by job applicants on personality tests has led to a tendency among some psychologists to focus their interpretive comments on the validity scales, because these scales are the *only* ones that fall above cutoff scores in over 95% of public safety job applicants (Roberts & Johnson, 1995).

This dilemma is present for psychologists in the employment-screening context who use any psychological test based on community normative samples**.** By contrast, the CPI Police and Public Safety Selection Report addresses these two critical profile distortions (spiked "fake good" scales and suppressed content scales) by supplementing the publisher's community norms with two sets of norms based on data from job applicants: (a) norms based on job applicants who subsequently became incumbents in the same occupation the applicant is applying for, and (b) norms based on job applicants applying for the same job the applicant is applying for, and who are of the same sex and ethnic group as the applicant.

Omitted Items

Although almost all job applicants complete all 434 items of the CPI, a small percentage leave four or five blank, and occasionally someone will omit many items. The number of unanswered items is printed in the report's "General CPI Results" section, and is repeated in a box on each of the profile pages. If 18 or more items are omitted the scoring program will not print the report, but will list each of the unanswered items.

The psychologist should always review the list of omitted items to determine if there is a pattern of item content in the omitted items that may be relevant to the selection decision. If the test has been invalidated because of omitted items, the answer sheet should be given back to the applicant to complete the unanswered items to the best of his or her ability. The completed test may then be re-scored and interpreted, if other validity indices meet acceptable levels.

Random Responding

Another relatively rare profile validity concern in job applicants is random responding. This can occur in applicants who become bored or frustrated by the lengthy written testing protocol required for public safety applicants. A good indicator of random answering is a low raw score on the Communality scale. This can be due to accidental mis-marking of the answer sheet, but in rare cases may reflect a poor reading ability.

Since about 15% of the applicant sample is bilingual, it is important to rule out poor English language skill as a cause. The interviewer should ask about languages spoken other than English (especially in the home), examine a writing sample obtained during the testing, and utilize a standardized cognitive test like the Wonderlic to address this issue.

Faking Bad

Applicants do not "fake bad" on pre-employment psychological tests. Although faking bad on the CPI can usually be detected by the presence of extremely low scores on scales like Well-Being, Communality and Good Impression, an applicant with low scores on these scales is generally observed to have a history of negative behavior consistent with the low scores. Generally, psychologists working in the public safety field will only see fake bad indications on these scales when conducting post-employment fitness for duty evaluations.

Faking Good

It is very difficult to accurately determine whether an applicant has invalidated the CPI taken as part of a job application by faking good. Although it is accepted clinical lore to regard high scores (T=>70, community norms) on the Good Impression (GI) scale as evidence of invalidity, this practice is not justified with applicants because many very qualified candidates and incumbents have scores at that level. It is very difficult to differentiate between someone who has a superior level of adjustment and is trying to "put their best foot forward" and a person who has falsified their responses to the test questions. According to Groth-Marnat (1997), the most significant factor in making this distinction is the person's history. "An individual with a history of poor adjustment combined with an unusually high Gi will probably be faking good, whereas a person with a history of good adjustment and a moderately high Gi will probably be expressing his or her superior level of adjustment (p. 353)." Although screening psychologists are usually dependent on the applicant's self-report of adult life behavior and general adjustment, it is advisable to have this information verified by other steps in the selection process such as the polygraph and background investigation.

This selection report permits an examination of the T score on the GI scale, based upon the community norms compared to the T score calculated using incumbent norms (page 2 of the report), or norms from applicants of the same sex and ethnic group (page 3 of the report). It is very important to examine the difference between the Good Impression T score using norms from

“all applicants “, versus the T score using norms from applicants of the same ethnic group as the applicant, because most commonly used validity scale T scores have a negative impact on Hispanics. (This is particularly true of the MMPI-2 Lie scale, but also evident in other “validity” scales in tests used for job selection.)

Chapter 3

Report Features

This chapter discusses the information presented on each page of the CPI Police and Public Safety report.

Identifying Information

The first page of the report begins with some basic information that identifies and describes the applicant. This includes the applicant's name, social security number (or other identification number), age, gender, and ethnicity. It also includes the test date, the position being applied for, the applicant's highest level of education, the types of public safety positions previously held, and the number of times the applicant has previously taken pre-employment psychological tests. (Note: The applicant's name and social security number, and the test date, is repeated as a header on the remaining pages of the report.)

General CPI Results

The first page of the report also presents the applicant's General CPI test Results, which consists of three types of basic CPI information.

The first type of basic CPI information is the CPI Type and Level. This information, which indicates the applicant's general interpersonal style and level of self-realization, helps the psychologist focus on the areas that are the most likely to produce job-relevant information during the follow-up interview. (More detailed information about the applicant's CPI Type and Level is presented on the fourth page of the report, titled "Applicant Level And Type Classification".)

The second type of basic CPI information is the number of "Selection Relevant CPI Items" that are endorsed by the applicant in the atypical, or "negative" direction. "Selection Relevant CPI Items" are those that (a) have been judged by psychologists to have content that is relevant to the determination of applicant suitability, and (b) are endorsed in the "negative" direction by relatively few applicants. Table 4 lists the percentile value associated with each possible number of "Selection Relevant CPI Items" endorsed, based on the public safety job applicant normative sample. The specific content of each critical item endorsed by the applicant is listed later in the report, on the page titled "Selection Relevant CPI Items".

The third type of basic CPI information is a count of the number of items that are unanswered by the applicant. If the applicant leaves 18 or more items blank, the profile is considered invalid and the body of the report will not print, but the omitted items will be listed for review by the psychologist. Even when a profile is valid, the psychologist should review the omitted items and discuss pertinent ones with the applicant. They are printed at the end of the Selection Relevant CPI Items section of the report.

Job Suitability Snapshot

Finally, the first page of the report presents a "Job Suitability Snapshot" which estimates various kinds of job-related risks associated with hiring the applicant. The first risk estimate concerns the applicant's likelihood of being rated as "poorly suited" by psychologists with expertise in this practice area. Other risk estimates concern the likelihood that the applicant has engaged in "problem" behaviors in each of six categories: Job Performance, Integrity, Anger

California Psychological Inventory (434)
Police and Public Safety Selection Report©

Sample, D rating (000-00-0001)

35 year old Asian/Pacific Islander male.

Tested on 01 April, 2001

Applying for the position of police officer/deputy/trooper

Highest Level of Education: Bachelors degree

Employment experience in public safety field: No response (verify).

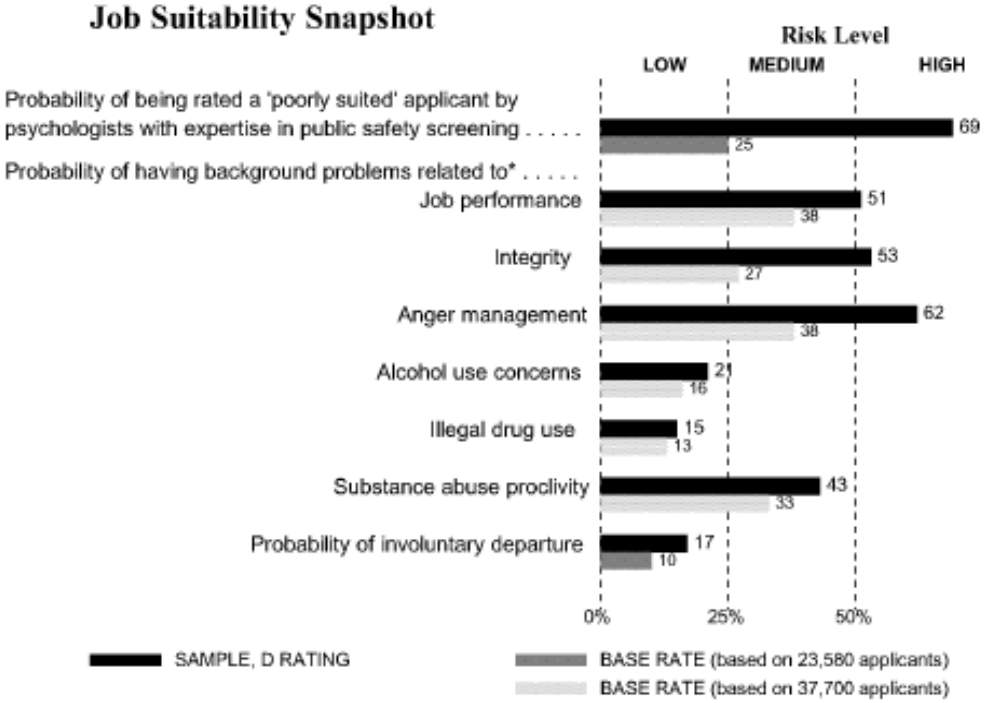
Previous Psychological Testing: None

General CPI Results

Type and level, based on CPI community norms	**Type: Beta** **Level: 4**
Selection-relevant CPI items -- number of these items* endorsed atypically, compared to the majority of public safety applicants (base rate = 7 items)	**22 items**
Number of unanswered items.	None

* These items should be reviewed with the applicant

Job Suitability Snapshot



***NOTE** The probabilities above indicate the likelihood that a personal history review with the applicant will reveal admissions of past behavior that police and public safety hiring authorities regard as possible negative indicators in the selection decision. Each probability statement must be compared with other data sources such as the interview, background check, and polygraph when formulating a selection recommendation. Refer to the *CPI Police and Public Safety Report User's Manual* for additional information.

Management, Alcohol Use, Illegal Drug Use, And Substance Abuse. Finally, for applicants applying to police officer positions only, there is an estimate of the likelihood that hiring the applicant would eventually result in involuntary departure (i.e., being fired).

Table 4

Percentiles Associated With The Number Of Selection Relevant Items Endorsed, In The Public Safety Job Applicant Sample (N = 50,488)

No. Of Items Endorsed	Percentile
0	6
1	17
2	30
3	41
4	51
5	58
6	65
7	70
8	75
9	78
10	81
11	84
12	86
13	88
14	89
15	90
16	92
17	93
18-19	94
20	95
21-22	96
23-25	97
26-30	98
31 or more	99

Each risk estimate is reported as a numeric probability of the undesirable outcome, and this probability is illustrated graphically in the report with a horizontal bar that is proportional to the probability value. The probabilities are categorized into three risk level categories: High risk ($p \geq 50\%$), Moderate risk ($p = 25\%$-49%), or Low risk ($p \leq 24\%$). The cutoff values corresponding to these risk levels are superimposed on the probability bars, as dotted lines, so

that it is easy to determine, by scanning the bar chart, the applicant's risk level for each of the risk criteria.

The risk statements in the Job Suitability Snapshot are generated from prediction equations based on logistic regression analyses that have been calibrated and cross validated on large samples of public safety job applicants. Chapter 3 of this manual contains a detailed discussion of the research on which the risk statements are based.

To provide a frame of reference for the risk estimates computed for the applicant, the Job Suitability Snapshot also contains base rate values, which show the actual incidence of a negative outcome on each risk criterion, in the normative sample of job applicants on which this report was based.

Table 5 contains a distribution of estimated risk levels (High, Low, and Moderate) for each of the risk criteria presented in the Job Suitability Snapshot. These estimates were computed by applying the risk estimation equations to each of the individuals in the normative sample of job applicants on which this report was based. As Table 5 indicates, the proportion of high risk estimates varies from a high of 23% for Anger Management, to a low of less than .5% for illegal drug use. Thus, Table 5 indicates that the Job Suitability Snapshot will place fewer than one fourth of the job applicants tested into a high risk category on any individual risk criterion. (Note that the values in Table 5 reflect the *estimated* likelihoods of a negative outcome for each risk criterion, based on the estimation equations, rather than the actual base rate incidence of negative outcomes. As stated above, the actual base rate incidences of negative outcomes are also printed in the report.)

Table 5

Predicted Likelihood Of Job Related Problems (N = 50,488)

Problem	Low (24%)	Moderate (25-49%)	High (50%)
Fail Psychological Evaluation [a]	57	31	12
Substance Abuse [b]	31	57	13
Illegal Drug Use [b]	91	9	*
Alcohol Use [b]	82	17	1
Anger Management [b]	22	55	23
Integrity [b]	58	31	11
Job Performance [b]	16	63	21

Note. The values represent the percentage distribution of the sample within each problem category. * indicates a percentage value < .5
[a] Sample size = 22,867. [b] Sample size = 36,276.

Table 6 indicates the proportion of high risk estimates, for each of the risk criteria in the Job Suitability Snapshot, computed separately for applicants in different ethnic groups. As Table 6 indicates, generally the white applicants have a somewhat higher estimated risk of problems on the various risk criteria than do the non-white applicants. One exception is that Asian applicants tend to have higher than average estimated risks on all of the risk criteria.

The above average rate of high estimated risks for Asian applicants can be explained by an unusual characteristic of the job applicant normative sample on which the report was based. The sample included data from a large agency, "Agency X", which administered the CPI to applicants before they reached the stage of psychological screening, that is, before the applicant

pool had been restricted by various preliminary types of screening, such as oral interviews and background investigations. (This unusual procedure was intended to reduce the fatigue of applicants taking the psychological test battery by administering instruments on separate occasions; the CPI was not used as part of the preliminary screening decision.) Consequently, the applicants included in the normative sample who were from Agency X included a higher than average proportion of individuals with serious, disqualifying character problems. Coincidentally, the applicants from Agency X also included a high proportion of Asian Americans.

Table 6

Percentages Of Public Safety Job Applicants Predicted To Have A High Likelihood Of Exhibiting Various Problems, By Ethnic Group

Problem	White (N = 32,212)	Black (N = 7,341)	Hispanic (N = 5,753)	Asian (N = 3,291)
Fail Psychological Evaluation	10	16	12	23
Substance Abuse	14	9	10	18
Illegal Drug Use	*	*	*	1
Alcohol Use	1	*	1	1
Anger Management	23	21	20	29
Integrity	12	9	11	16
Job Performance	22	19	17	29

Note. * indicates a percentage value < .5

Table 7

Percentages Of Public Safety Job Applicants Predicted To Have A High Likelihood Of Exhibiting Various Problems, By Ethnic Group (Excluding Applicants Tested Before The Psychological Evaluation)

Problem	White (N = 31,735)	Black (N = 7,281)	Hispanic (N = 5,640)	Asian (N = 1,809)
Fail Psychological Evaluation	10	16	11	13
Substance Abuse	13	09	10	10
Illegal Drug Use	*	*	*	*
Alcohol Use	1	*	1	*
Anger Management	23	20	20	19
Integrity	11	09	11	10
Job Performance	21	19	17	19

Note. * indicates a percentage value < .5

Table 7 presents the same analysis of the risk estimates by ethnic group as shown in Table 6, only this time the applicants from Agency X were excluded. In Table 7 the risk estimates for Asian Americans are on a par with the risk estimates for the other three ethnic groups. This

revised table provides the most accurate estimate of how the risk statements would affect job applicants who are referred to the screening psychologist because it is limited to applicants who have reached the stage of psychological screening, which is the stage at which the Police & Public Safety Report is typically used. The data in Table 7 suggest, therefore, that for applicants who have already passed through pre job offer background screening before being referred for psychological screening, which is the usual public safety screening practice, there is no reason to expect any meaningful differences in estimated risk levels among ethnic groups.

Table 8 indicates the proportion of high risk estimates, for each of the risk criteria in the Job Suitability Snapshot, computed separately for males and females. As Table 8 indicates, generally the male applicants have a higher estimated risk of problems on the various risk criteria than do the female applicants. The differences are large for Anger Management and Integrity, but otherwise the differences are small.

Table 8

Percentages Of Public Safety Job Applicants Predicted To Have A High Likelihood Of Exhibiting Various Problems, By Gender

Problem	Male (N = 41,042)	Female (N = 9,432)
Fail Psychological Evaluation	12	11
Substance Abuse	14	10
Illegal Drug Use	*	1
Alcohol Use	1	*
Anger Management	25	14
Integrity	13	6
Job Performance	22	19

Note. * indicates a percentage value < .5

The risk statements are valuable to the screening psychologist because they suggest which area of an applicant's adult life history is most likely to include behavior that would raise concerns about their suitability for work as a public safety officer. The psychologist should be especially thorough in reviewing behaviors related to any "high risk" classification.

It is important that the psychologist become familiar with the behaviors that make up each risk category, as listed in Table 9. The base rates for each negative behavior that make up a risk composite vary, so it is useful to determine whether or not the high risk rating is supported by a serious negative behavior, or a more benign one. Specifically, if an applicant was rated as having a High Risk of Anger Management problems it is important during the interview to ask the applicant about each of the five behaviors that make up this criterion (such as "been in a physical fight since age 18" or "struck a spouse or romantic partner") .If an applicant is rated High Risk for any of the behavioral problem areas but denies actual behavior that would support the prediction, it is advisable to recommend that the department rule out concerns in these areas during the polygraph and background investigation.

Table 9

PHQ Problem Responses Used to Create Composite PHQ Problem Variables

Composite variable	Item	Problem response	%
Job Performance	204	Is late to work once a month or more	7
	209	Fired 2 or more times	3
	210	Resigned a job to avoid being fired	11
	214	Received 2 or more job reprimands	15
	217	Has had 2 or more emotional arguments at work	10
	308	Military discharge was general or less than honorable	11 [a]
	309	Had 2 or more disciplinary actions in military	5 [a]
	411	As an officer, had 3 or more citizens complaints	9 [b]
	412	As an officer, had a citizens' complaint sustained	5 [b]
	413	Received three or more reprimands as an officer	6 [b]
	414	Suspended from law enforcement duty	10 [b]
	423	Fired from a law enforcement job after probation	3 [b]
	425	Been the subject of an internal affairs investigation	10 [b]
		Any of above responses	38
Illegal drug use	815	Used marijuana 21 or more times	4
	816	Used marijuana during the last 12 months	1
	820	Used cocaine 3 or more times	3
	823	Used cocaine during the last 12 months	*
	826	Has used hallucinogens	3
	850	Has driven after using drugs	9
	852	Has sold drugs	2
		Any of above responses	13
Integrity	703	Has been arrested 2 or more times	8
	704	Convicted of a misdemeanor	15
	705	Convicted of a felony	1
	711	Stole items worth $25 or more	4
	717	Committed or arrested for embezzlement	3
	221	Stole goods worth $25 or more from work	4
	222	Stole money from work	3
	926	Rejected from job because of a background investigation	4
	928	Rejected from job because of a polygraph examination	2
		Any of above responses	27

Table 9 (continued)

PHQ Problem Responses Used to Create Composite PHQ Problem Variables

Composite variable	Item	Problem response	%
Alcohol abuse	724	Has been arrested for DUI	5
	802	Once drank 3 or more drinks each day	7
	804	Drinks heavily several times a month or more	2
	808	Has been in fights after drinking alcohol	5
	812	Sometimes drives while drinking	6
		Any of above responses	16
Anger management	217	Had 2 or more emotional arguments at work	10
	720	Committed or arrested for assault	8
	808	Has been in fights after drinking alcohol	5
	915	Has been in fights since age 18	27
	917	Has hit romantic partner	7
		Any of above responses	38
Substance abuse	724	Arrested for DUI	5
	802	Once drank 3 or more drinks each day	7
	804	Drinks heavily several times a month or more	2
	808	Has been in fights after drinking alcohol	5
	812	Sometimes drives while drinking	6
	815	Used marijuana 21 or more times	4
	816	Used marijuana during the last 12 months	1
	820	Used cocaine 3 or more times	3
	823	Used cocaine during the last 12 months	*
	826	Has used hallucinogens	3
	850	Has driven after using drugs	9
	852	Has sold drugs	2
	856	Smokes half a pack of cigarettes, or more, a day	13
		Any of above responses	33

Note. % values represent the percent of applicants with a problem response, computed for the sub-sample of 36,276 applicants for whom PHQ data was available. * indicates a percentage value < .5
[a] Percentages computed within the subset of applicants who have military experience. [b] Percentages computed within the subset of applicants who have law enforcement experience.

Applicant Comparison Profile #1: Job Incumbent & General Community Norms

The second page of the report displays the applicant's CPI scale scores in the form of two graphic profiles that relate the applicant's test scores to those of two other groups: (a) incumbent employees in the same job category (e.g., police or firefighter) as the one the applicant is applying for, as represented by the job incumbent normative sample, and (b) members of the general community, as represented by the CPI publisher's community normative sample.

The two profiles are based on T scores that compare the applicant's raw scores on each CPI scale to the mean scores (and standard deviations) on that scale for the two normative groups (public safety job incumbents and members of the general community). Both sets of T scores are scaled to have a mean of 50 and a standard deviation of 10. Beneath the chart containing the two graphic profiles, the report also prints out the two sets of T scores, along with the applicant's raw scores, for each scale.

The profile based on job incumbent norms is presented because job incumbents are the most appropriate standard of comparison for entry level applicants. The job incumbents in the normative sample took the CPI as part of a selection process similar to the one the current applicant is going through, were hired, completed probation, and then served satisfactorily in the same job category as the one the applicant is applying to. Ideally, agencies would like current job applicants to have traits and characteristics similar to those of previous applicants who subsequently became successful incumbent officers. (Note that the CPI data used to create the norms for the job incumbents was collected during pre-employment selection, not after the individuals had been hired.)

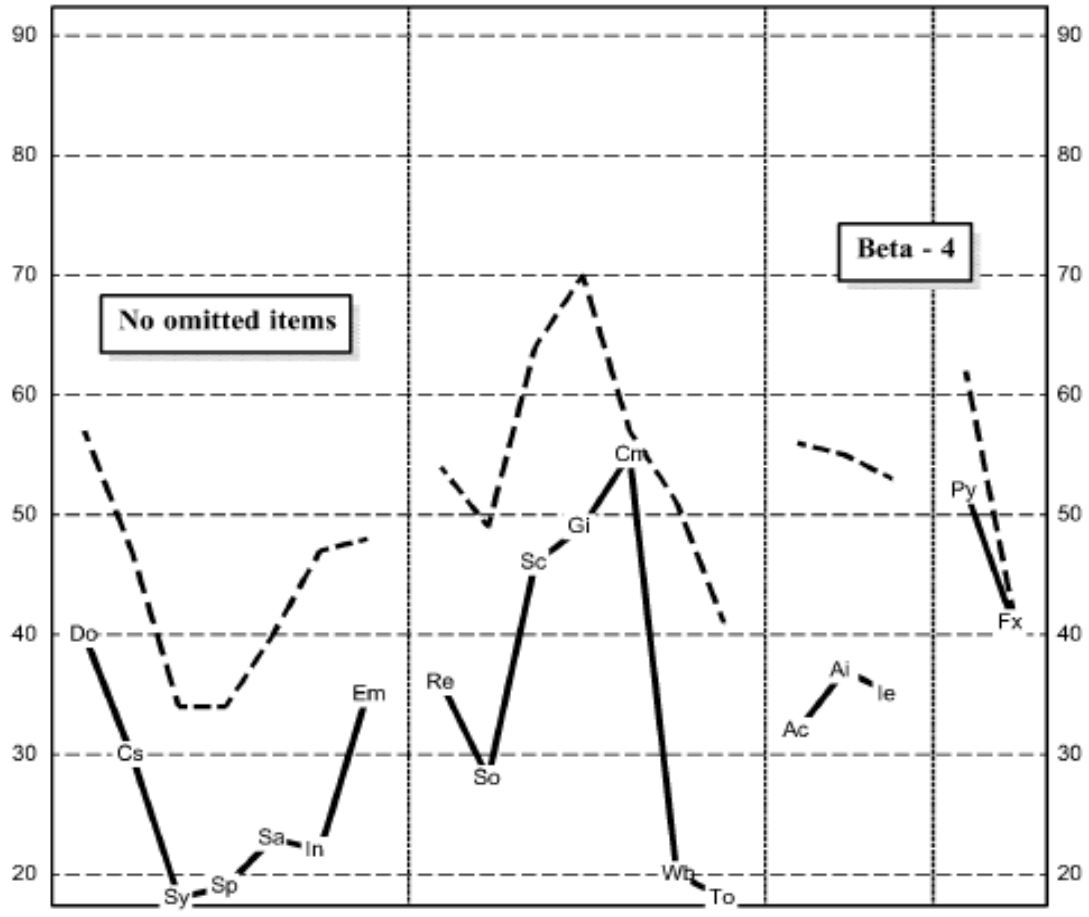
The profile based on community norms is presented, for purposes of comparison, because this is the standard CPI profile that psychologists are accustomed to seeing in CPI reports that are not designed expressly for public safety selection. There is an extensive research literature supporting the validity and selection utility of the CPI scales, as well as a body of interpretive lore available from other authors (Gough, 1995; Meyer and Davis, 1992; McAllister, 1988, 1995).

Because public safety job incumbents tend to have more homogeneous CPI scores than do members of the general community, profiles based on job incumbent norms tend to have more highs and lows than do profiles based on community norms. Thus, it is typical for an applicant to have a profile based on community norms that is only slightly above or below the midpoint of 50, and therefore does not suggest or support a serious concern about the applicant, while the same test scores can produce a profile based on job incumbent norms that deviates considerably from the midpoint of 50 and therefore does attract the attention of the screening psychologist. In other words, the applicant's CPI scores could be within the normal range of variation with respect to community norms, but not within the normal range of variation with respect to public safety job incumbent norms, and the two profiles would reflect this clearly.

The screening psychologist can use the incumbent profile to identify how an applicant differs from the modal successful officer in important traits and characteristics. For example, an applicant's raw score on the Dominance scale may produce a T of 70 when compared to the community norms, and suggest a very assertive and dominant style of interacting with others that may be a concern to the psychologist. However, the same raw score will produce a T score nearer 50 when plotted against police incumbent norms, and therefore would not be regarded as a characteristic to be concerned about. The "spikes" produced on the incumbent normative profile are particularly useful in identifying applicants who have a pattern of behavior involving violation of societal rules, norms and regulations. This characteristic is most notable on scales So, Re, Sc, Ac.

Applicant Comparison Profile #1

Applicant's scale scores compared to norms based on the pre-employment scores of a sample of 10,680 INCUMBENT police officers/deputies/troopers and the scores of a sample of 6000 members of the general community.



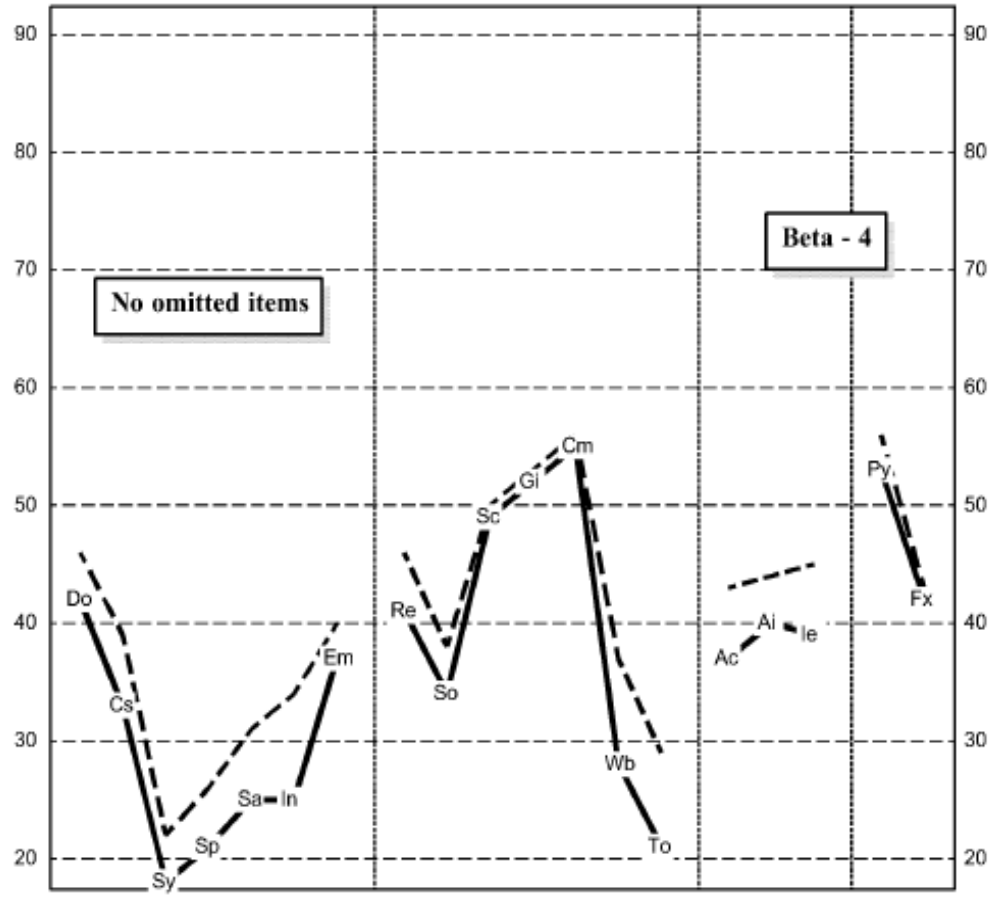
Legend: ——— *Incumbent police officers/deputies/troopers* - - - - *Community (CPI)*

	Do	Cs	Sy	Sp	Sa	In	Em	Re	So	Sc	Gi	Cm	Wb	To	Ac	Ai	Ie	Py	Fx
Raw scores	23	14	12	17	12	14	18	26	29	28	30	37	30	14	28	22	29	19	10
***Incumbent T**	**40**	**30**	**9**	**19**	**23**	**22**	**35**	**36**	**28**	**46**	**49**	**55**	**20**	**14**	**32**	**37**	**35**	**52**	**41**
Community T	57	47	34	34	40	47	48	54	49	64	70	57	51	41	56	55	53	62	42

*NOTE T Scores based on public safety incumbent norms are often lower or higher than those based upon community norms. The relatively homogeneous response to the CPI items by most individuals applying to public safety positions results in noticeable elevations for those who answer atypically. This feature is useful to the screening psychologist because it identifies scale domains and specific items to pursue during the interview. Although the incumbent T scores are linked to job-relevant screening criteria and may be used to support the screening decision, it is not appropriate to assume the same correspondence between these scores and the standard interpretations that have been established for the community-based norms.

Applicant Comparison Profile #2

Applicant's scale scores compared to norms based on a sample of 40,814 APPLICANTS for the position of police officer/deputy/trooper, and a sample of 2,557 male asian applicants for the same position.



Legend: ——— *PS Applicants for position* — — — *PS Applicants (by sex and ethnic)*

	Do	Cs	Sy	Sp	Sa	In	Em	Re	So	Sc	Gi	Cm	Wb	To	Ac	Ai	Ie	Py	Fx
***All applicants T**	**42**	**33**	**14**	**21**	**25**	**25**	**37**	**41**	**34**	**49**	**52**	**55**	**28**	**21**	**37**	**40**	**39**	**53**	**42**
*Sex/ethnic T	46	39	22	26	31	34	40	46	38	50	53	56	37	29	43	44	45	56	43

*NOTE T Scores based on public safety incumbent norms are often lower or higher than those based upon community norms. The relatively homogeneous response to the CPI items by most individuals applying to public safety positions results in noticeable elevations for those who answer atypically. This feature is useful to the screening psychologist because it identifies scale domains and specific items to pursue during the interview. Although the public safety applicant T scores are linked to job-relevant screening criteria and may be used to support the screening decision, it is not appropriate to assume the same correspondence between these scores and the standard interpretations that have been established for the community-based norms. The applicant's scores are compared to norms based on sex and ethnic group in order to help the psychologist identify and address any significant differences in T scores that may be associated with sex and ethnic group membership. Note that in order to comply with the 1991 Civil Rights Act, selection decisions should not be based on this profile.

Applicant Comparison Profile #2: Job Applicant Norms

The third page of the report displays the applicant's CPI scale scores in the form of two additional graphic profiles that relate the applicant's test scores to those of two other groups: (a) all applicants who are applying for jobs in the same occupational category as the applicant, and (b) all applicants who are applying for jobs in the same job category as the applicant, and who are of the same gender and ethnicity as the applicant.

The two profiles are based on T scores that compare the applicant's raw scores on each CPI scale to the mean scores (and standard deviations) on that scale for the two different groups, based on the job applicant normative sample compiled for this report. Both sets of T scores are scaled to have a mean of 50 and a standard deviation of 10. Beneath the chart containing the two graphic profiles, the report also prints out the two sets of T scores.

The two profiles are presented together in order to examine the possibility that a given applicant's scores may be more or less extreme relative to the scores of other applicants of the same gender and ethnicity than they are relative to the scores for all job applicants. Indication of the applicant's gender and ethnicity is important in order to allow the screening psychologist to address the influence that these demographic variables may have had in producing elevations on particular scales or subscales. This feature of the report is useful given the importance of avoiding adverse impact against protected classes of job applicants (as required by state and federal law).

Although it is important to examine whether or not gender and ethnicity have any effect on test scores, extensive screening experience with these gender-by-ethnicity profiles indicates that the influence of demographic variables is not large for CPI content scales, supporting the conclusion that extreme scale scores usually reflect higher levels of behavior associated with the scale, regardless of gender or ethnic membership. Note, too, that in order to comply with the 1991 Civil Rights Acts, selection decisions should not be based on these gender by ethnic T scores, but rather the T scores based on incumbents, or on the aggregate of applicants across all ethnic and gender groups.

This profile, based on norms from applicants of the same ethnic and gender group as the applicant, is primarily useful when evaluating scales like Good Impression that are influenced by most applicant's attempts to "fake good." The Good Impression scale, like its counterparts in other tests (L, K, S on the MMPI-2; PIM on the PAI), is extremely elevated when compared to community norms. In addition, Hispanic T scores on these scales are routinely elevated about five T score points higher than are non-Hispanic white T scores, yet there is no evidence that this difference is predictive of successful job performance, or past negative behavior. By examining the ethnic by gender profile for Good Impression, it is possible to avoid making a false positive conclusion that the applicant's profile is invalid because of defensiveness.

Applicant Level And Type Classification

The fourth page of the report contains the "Applicant Type and Level Classification", which provides a description of the applicant's approach to the world, in terms of CPI Type and Level classifications.

The CPI Type designation indicates which of four basic types (Alpha, Beta, Gamma, Delta) best describes a test-taker based upon the interaction of his or her scores on two orthogonal scales: externality-internality (v1), and norm-favoring versus norm-questioning (v2).

The report illustrates the applicant's Type orientation graphically, with two charts that plot the applicant's scores on the v.1 and v.2 scales. On the first of these charts (left side of the page), the horizontal and vertical axes represent the CPI community norms for the v.1 and v.2 scales. On the second of these charts, the axes represent the Police & Public Safety Norms for the two scales. Because of the differences in scaling between the two sets of norms, it is possible that

the applicant could be assigned to one Type on the basis of the CPI community norms, and a different Type on the basis of the Police & Public Safety Norms.

In addition to the graphical display, the report contains a narrative discussion of the characteristics associated with the Type(s) to which the applicant is assigned, as well as an indication of the proportion of the public safety job applicant normative sample with that Type classification.

Table 10 contains the percentage of public safety job applicants who exhibit selection relevant problems, tabulated separately for applicants who are classified into each of the four CPI types, based on general community norms. The problem variables analyzed are the seven problem variables that are represented in the Job Suitability Snapshot portion of the report (Job Performance, Integrity, Anger Management, Alcohol Use, Illegal Drug Use, Substance Abuse, and Failing The Psychological Evaluation). As the table indicates, the incidence of problems is consistently higher for applicants classified as Gamma and Delta, than for applicants classified as Alpha and Beta. For example, the percentage exhibiting Anger Management problems is 53 and 42, respectively, for applicants classified as Gamma and Delta, but only 37 and 33, respectively, for applicants classified as Alpha and Beta.

Table 10

Percentage Of Public Safety Applicants Who Admit Selection Relevant Problems, By CPI Type

Problem	Alpha	Beta	Gamma	Delta
Fail Psychological Evaluation [a]	23	21	49	42
Substance Abuse [b]	31	30	48	43
Illegal Drug Use [b]	12	11	23	18
Alcohol Use [b]	16	15	24	21
Anger Management [b]	37	33	53	42
Integrity [b]	26	24	36	31
Job Performance [b]	37	33	54	45

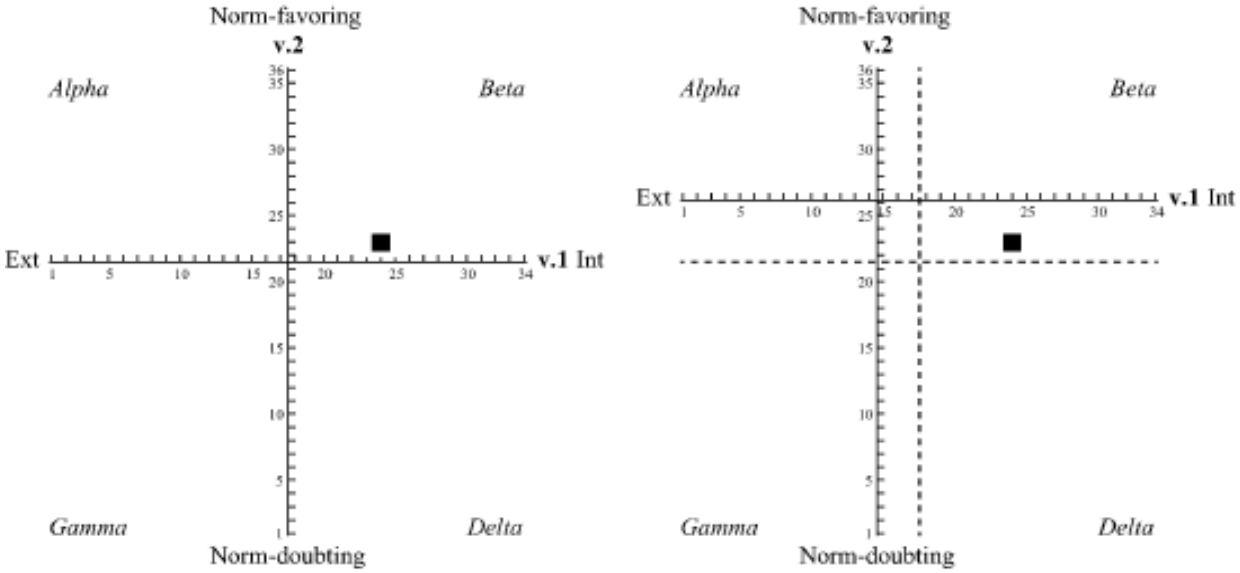
Note: CPI Type based on general community norms.
[a] Sample size = 22,867. [b] Sample size = 36,276.

The report also contains information about the applicant's CPI Level classification, which is based on the applicant's score on the v.3 scale. The Level classification is used to provide additional meaning to the Type designation, by indicating the degree to which the person has managed to integrate the Type characteristics towards becoming fully developed and self-realized.

The following information about CPI Level is provided in the report:

- the applicant's Level value, based on CPI community norms.
- the proportion of the general community (based on the CPI community normative sample) who are classified (a) at the applicant's Level value, and (b) at or below the applicant's Level value
- the proportion of public safety job applicants (based on the job applicant normative sample developed for this report) who are classified (a) at the applicant's Level value, and (b) at or below the applicant's Level value
- a narrative discussion of the characteristics associated with the applicant's Level value.

APPLICANT LEVEL AND TYPE CLASSIFICATION



Level 4 (v.3 = 34, calculated on CPI (434) norms. 22% of the general population classified as level 4; 61% classified as level 4 or below. **NOTE: 18% of police and public safety applicants are at level 4; 27% classified as level 4 or below.**
ALSO NOTE: three-fourths of officers at Level 1-5 (CPI) were rated as problem officers.

Type classification is Beta (v.1 = 24, v.2 = 23) - CPI (434) norms.

At their best Betas can be inspirational models of goodness and insight. However, some Beta subjects are also described as: painstaking, conservative, conventional, quiet, methodical cautious, retiring, moderate, reserved, unassuming. At their worst they can be comformist, constricted, fearful, and anergic.

Type classification is Delta - Roberts Police and Public Safety (434) norms.

At their best Deltas are creative, perceptive, and visionary. However, some Delta subjects are also described as: self-defeating, unable to commit self to any type of action (indecisive), lacks sense of personal meaning. At their worst they can be fragmented, conflicted,withdrawn, and prone to decompensation.

CPI Special Purpose Scales

The fifth page of the report contains a table of CPI Special Purpose Scales. These are scales that were created after the development of the CPI basic folk scales (which are contained in the CPI profiles on pages two and three) and the structural scales (which are used to determine CPI Type & Level). Detailed descriptions of these scales are provided in the CPI manual (Gough, 1995).

For each of the special purpose scales, the report lists the applicant's raw score, the T score based on CPI community norms, and the T score based on public safety job incumbent norms. T scores that are substantially different from the average value of 50 -- i.e., T scores of 40 or less, or 65 or greater -- are printed in boldface.

Some of the Special Purpose scales (such as Amicability, Hostility, Narcissism, Work Orientation, and Managerial Potential) have particular value in assessing how an applicant would respond to the agency's commitment to community policing, or to similar demands for an active involvement with the community he or she serves. A new addition to the Special Purpose Scales is the Integrity scale (Roberts, Gough, Johnson, & Bradley, 1999) that was developed and validated against the criterion of lying about recent illegal drug use.

Selection Relevant CPI Items

The sixth page of the report summarizes the applicant's endorsement of Selection-Relevant CPI Items. These are individual CPI items that meet two conditions: (a) they were judged by a panel of expert psychologists to contain content that is particularly relevant to public safety job performance, and (b) they are answered in the "negative" direction by only a small proportion (ten per cent or less) of public safety job applicants. For example, one Selection Relevant item is "It is hard for me to start a conversation with strangers", which is endorsed as "true" by less than 10% of the public safety job applicants in the job applicant normative sample. Another is "I would do anything on a dare" which is endorsed as "true" by only 1% of public safety job applicants.

In addition to being rated as highly job relevant by the panel of expert psychologists, some of the Selection Relevant items were also demonstrated to be correlated with substandard police performance, on three or more job function categories in a study in which police sergeants rated the performance of officers they supervised (Johnson, Benner, & Roberts, 1990). For each Selection-Relevant item that the applicant endorses in the atypical direction, the report lists the actual item content and the proportion of public safety job applicants who endorse these items in the same, atypical way. For the items that were shown to be correlated with substandard performance, the item content is printed in italics.

The listing of items is organized by the job function category to which each item is most relevant. The job function categories are: Self-initiative/motivation, Following rules and regulations, Interpersonal skills/relationships with coworkers and the public, Self control, and Assertiveness.

The listing of Selection Relevant item endorsements in the report provides insights about the applicant that are not always discernable from scale scores alone. It is useful for screening psychologists to discuss these item endorsements during the interview with the applicant. This may help individualize the suitability assessment, and will also serve to rule out mismarks or misunderstandings by the applicant.

(Note: Depending on the number of Selection Relevant items the applicant endorses, this section of the report could require an additional page.)

CPI Special Purpose Scales

Since the development of the CPI basic folk scales (reported on the CPI profiles of this report) and structural scales (which render the CPI Type and Level), ongoing research has provided a number of special purpose scales for use at the discretion of the examiner. Detailed descriptions of these scales are provided in the *CPI Manual* (Appendix A) and in the *Technical Guide* that accompanies this report.

Scale	Description	Raw Score	Community T	Incumbent T*
Nar	Narcissistic Personality--49 items	19	42	51
Hos	**Hostility(Adams)**--30 items	15	50	**71**
Mp	**Managerial Potential**--34 items	17	49	**21**
Wo	Work Orientation--40 items	31	55	31
Anx	**Leventhal-Anxiety**--22 items	8	58	**87**
Ami	Amicability--36 items	25	56	35
Lp	Leadership--70 items	50	56	29
Leo	Law Enforcement Orientation (Gough)--42 items	33	70	50
F/M	Femininity/Masculinity--32 items	13	48	53
So	**Socialization**--46 items	29	49	**28**
So1	**Optimism, self-confidence, pos. affect**--12 items	7	42	**2**
So2	Self-discipline, cathexis of social norm--15 items	11	56	50
So3	Good memories of home and parents--10 items	7	54	45
So4	Interpersonal awareness and sensitivity--9 items	4	41	47
Itg	Integrity (Roberts, Gough, et al)--46 items	28	68	36

* The T-scores in the right-hand column are calculated from a normative group of 10,680 **incumbent** police officers/deputies/troopers. T scores are printed in **boldface** if T <= 30 or T >= 65, and they suggest a job-relevant concern.

Selection-Relevant CPI Items

Items endorsed by applicant, categorized by job function

The items printed below were endorsed by this applicant as indicated by the T(true) or F(false) in the parentheses after each item. The percent following the T or F endorsement is the percent of police and public safety applicants of the same sex who endorsed the item in the same direction. *Items printed in italics were correlated with substandard performance on three or more police officer job function categories as rated by sergeants who knew the post probation officers well.* It is useful to discuss selected item endorsements with the applicant during the interview. This practice may help individualize the suitability assessment, and will also serve to rule out mismarks or misunderstandings by the applicant.

Self-initiative/motivation (5 items endorsed)

12. I often feel that I made a wrong choice in my occupation. (T-5%)
147. I certainly feel useless at times. (T-7%)
150. Criticism or scolding makes me very uncomfortable. (T-12%)
417. Any job is all right with me, so long as it pays well. (T-7%)
426. I get tired more easily than other people seem to. (T-0%)

Following rules and regulations (3 items endorsed)

105. I am fascinated by fire. (T-5%)
257. I often feel as though I have done something wrong or wicked. (T-0%)
388. When I am cornered I tell that portion of the truth which is not likely to hurt me. (T-20%)

Interpersonal skills/relationships with coworkers and the public (1 item endorsed)

194. I like to keep people guessing what I'm going to do next. (T-15%)

Self control (7 items endorsed)

132. I fall in and out of love rather easily. (T-3%)
137. It is hard for me just to sit still and relax. (T-7%)
187. I am inclined to take things hard. (T-9%)
220. I feel uneasy indoors. (T-0%)
243. I am often bothered by useless thoughts which keep running through my mind. (T-1%)
309. I have been afraid of things or people that I knew could not hurt me. (T-7%)
416. I don't think I'm quite as happy as others seem to be. (T-3%)

Assertiveness (6 items endorsed)

7. When in a group of people I usually do what the others want rather than make suggestions. (T-5%)
38. It is hard for me to start a conversation with strangers. (T-10%)
40. I get very nervous if I think that someone is watching me. (T-5%)
58. I get very tense and anxious when I think other people are disapproving of me. (T-9%)

Indicators Of Essential Job Functions And Job Performance Problems

The seventh page of the report, "Indicators Of Essential Job Functions and Job Performance Problems for Police Officer Applicants", is printed only when the applicant is applying for the position of police officer/deputy/trooper. This page lists each CPI scale or subscale that meets the following criteria: (a) the scale has been shown to be significantly correlated with ratings of officer performance on a specific job function or job problem area, and (b) the applicant's scale score differs by at least one standard deviation from the average score for public safety job applicants. The scale is listed as a "favorable indicator" if the item is endorsed in the direction that is correlated with satisfactory performance, and as an "unfavorable indicator" if the item is endorsed in the direction that is correlated with unsatisfactory performance.

This feature of the report relies on a study in which 247 post-probationary police officers from one large urban department were rated on a series of job performance and job problem dimensions (Johnson, Benner, & Roberts, 1990). In this study, the sergeants providing the ratings were promised anonymity, and guaranteed that ratings of individual officers would not be shared with department management. These safeguards led to an unusual level of frankness about substandard behavior among these incumbent officers. (For example, 12% of the officers rated were described as having problems with excessive force; a level that would never be found in standard performance ratings made within a police department).

The listing of indicators is presented in a table that contains a row for each of ten essential job functions (e.g., "patrol responsibility" or "relations with citizens") and each of ten job performance problems (e.g., "excessive/ unnecessary force" or "unethical behavior"). For each row of the table, there is a column listing the acronyms of the CPI scales that are favorable indicators, and a column listing the acronyms of the CPI scales that are unfavorable indicators. At the bottom of the table is a count of the total number of favorable and unfavorable indicators listed for the applicant. (Note: a single CPI scale may be listed in more than one row of the table; this redundancy indicates the "broadband" nature of many scales' linkage to job performance.)

The information presented in this page of the report helps the screening psychologist relate the CPI scale scores presented in the report to specific job performance concerns about the applicant.

Item Responses

The last page of the report lists the applicant's response (true or false) to each of the 434 CPI items. This information can be compared to the marks on the actual CPI answer sheet, in order to verify the accuracy of the data entry. (Ordinarily, data entry is accomplished by means of an optical scan of the answer sheet.)

Indicators of Essential Job Functions and Job Performance Problems for Police Officer Applicants

The table below identifies test results that are associated with either favorable or unfavorable supervisory ratings on (1) job functions that are considered essential for success as a public safety officer, and (2) potential job performance problems. Note that a single indicator may be listed in the table in more than one location; this redundancy reflects the "broadband" nature of many indicators' linkages to selection criteria.

	Favorable indicators	Unfavorable indicators
ESSENTIAL JOB FUNCTIONS		
Job knowledge		Cs
Written communications		Cs, Sy, Mp, v.3, Lvl, To
Verbal communications		Cs, To, Mp, v.3, So1, Lvl Hos, Wb
Problem solving/decisions		Cs, So, To, v.3, Lvl, Hos
Patrol responsibility		
Control of conflict	v.1	So
Reliability		So
Relations with co-workers	In	So
Relations with citizens		So, Hos
Overall percentile rating		Cs, So
JOB PERFORMANCE PROBLEMS		
Excessive/unnecessary force		
Alcohol abuse		So
Illegal Drug Use		
Firearms misuse		So
Unethical behavior	In	So, To, Mp, Lp
Excessive disablilty use		
Sick leave abuse		
Dishonesty/lack of integrity		So
Personal relationship problems		So, Wb, Mp, Lp, So1
Favoritism/discrimination		So
Other problems		Hos, To, So1, v.3
TOTAL INDICATORS	**3**	**45**

Item Responses

1. T	35. F	69. T	103. F	137. T	171. F	205. F	239. F	273. F	307. F	341. F	375. F	409. T
2. F	36. F	70. F	104. T	138. T	172. F	206. T	240. F	274. F	308. F	342. F	376. F	410. T
3. T	37. T	71. F	105. T	139. F	173. F	207. T	241. F	275. F	309. T	343. T	377. F	411. F
4. F	38. T	72. F	106. T	140. T	174. F	208. T	242. F	276. T	310. T	344. T	378. F	412. T
5. F	39. F	73. F	107. F	141. T	175. T	209. F	243. T	277. F	311. F	345. F	379. F	413. T
6. T	40. T	74. T	108. F	142. T	176. F	210. F	244. F	278. T	312. T	346. F	380. T	414. T
7. T	41. F	75. F	109. F	143. T	177. T	211. F	245. T	279. F	313. T	347. F	381. F	415. F
8. F	42. F	76. F	110. F	144. F	178. T	212. T	246. F	280. T	314. T	348. T	382. F	416. T
9. F	43. F	77. F	111. F	145. F	179. F	213. F	247. T	281. F	315. F	349. F	383. T	417. T
10. T	44. F	78. F	112. T	146. T	180. T	214. F	248. F	282. F	316. T	350. F	384. F	418. F
11. F	45. F	79. F	113. T	147. T	181. F	215. F	249. F	283. T	317. T	351. T	385. F	419. F
12. T	46. F	80. F	114. F	148. F	182. T	216. T	250. F	284. T	318. T	352. F	386. T	420. T
13. F	47. F	81. F	115. F	149. F	183. F	217. F	251. F	285. T	319. T	353. F	387. T	421. F
14. T	48. F	82. F	116. T	150. T	184. T	218. F	252. F	286. F	320. F	354. T	388. T	422. F
15. T	49. F	83. T	117. F	151. T	185. T	219. T	253. F	287. T	321. F	355. T	389. F	423. F
16. F	50. T	84. F	118. T	152. F	186. T	220. T	254. F	288. F	322. T	356. F	390. F	424. T
17. F	51. T	85. F	119. F	153. F	187. T	221. T	255. F	289. T	323. T	357. F	391. F	425. F
18. F	52. F	86. T	120. F	154. F	188. T	222. F	256. T	290. F	324. F	358. F	392. F	426. T
19. T	53. T	87. T	121. T	155. F	189. F	223. F	257. T	291. F	325. F	359. T	393. T	427. F
20. T	54. F	88. F	122. F	156. T	190. F	224. T	258. T	292. T	326. T	360. F	394. T	428. T
21. T	55. T	89. F	123. T	157. F	191. F	225. T	259. T	293. F	327. F	361. F	395. F	429. F
22. F	56. F	90. F	124. F	158. T	192. F	226. F	260. T	294. F	328. T	362. F	396. F	430. F
23. F	57. F	91. F	125. T	159. T	193. F	227. F	261. F	295. F	329. T	363. F	397. T	431. F
24. F	58. T	92. F	126. T	160. F	194. T	228. F	262. F	296. F	330. F	364. F	398. F	432. T
25. T	59. T	93. F	127. T	161. F	195. T	229. T	263. T	297. F	331. F	365. F	399. F	433. T
26. F	60. T	94. F	128. T	162. T	196. F	230. T	264. T	298. F	332. F	366. F	400. T	434. T
27. T	61. T	95. T	129. T	163. F	197. T	231. F	265. F	299. F	333. T	367. F	401. F	
28. F	62. F	96. T	130. F	164. F	198. F	232. F	266. T	300. F	334. T	368. T	402. F	
29. F	63. T	97. F	131. T	165. T	199. T	233. T	267. F	301. F	335. F	369. F	403. T	
30. T	64. F	98. T	132. T	166. T	200. T	234. F	268. F	302. F	336. F	370. F	404. F	
31. F	65. F	99. F	133. F	167. T	201. T	235. F	269. T	303. T	337. F	371. T	405. F	
32. T	66. F	100. T	134. T	168. F	202. T	236. F	270. F	304. T	338. F	372. F	406. F	
33. F	67. F	101. F	135. T	169. F	203. F	237. F	271. F	305. T	339. F	373. F	407. F	
34. T	68. F	102. F	136. F	170. F	204. T	238. F	272. T	306. F	340. F	374. F	408. F	

End of report

Chapter 4

Development And Validation Of Predictive Statements In The Job Suitability Snapshot

As described in previous sections of this chapter, the CPI Public Safety Screening Report contains an estimate of the likelihood that an applicant for a public safety position would be rated as "poorly suited" for the job by psychologists with expertise in public safety screening. The report also contains estimates of the likelihood that the applicant has a history of job-relevant behavioral problems in each of six behavioral categories. Each of these likelihood estimates is based on a prediction formula that relates CPI scale scores to a particular criterion variable. This section of the manual describes the research that was done to develop and cross-validate these prediction formulas.

Sample Composition

The prediction formulas were derived and tested using two subsamples of the total public safety job applicant normative sample for which CPI data was available (N = 50,488). One subsample, used to predict the psychological ratings, contained 22,867 cases. The applicants in this sample received a complete psychological evaluation as part of the process of applying to be a public safety officer. This evaluation included the administration of the CPI, along with other tests and an interview, and culminated in a rating (A, B, C, D, F) of the applicant's suitability for the public safety position. The other subsample, used to predict the job-relevant behavioral problems, contained 36,276 cases. The applicants in this sub-sample completed the CPI and the Johnson, Roberts Personal History Questionnaire, as part of the process of applying to be a public safety officer.

Table 11 shows the relationship of the two prediction sub-samples to each other, and to the complete job applicant normative sample that was used as a basis for most of the other computations done for the CPI report. As the table indicates, the two prediction sub-samples overlapped substantially but not entirely. Specifically, of the 50,488 total cases in the job applicant sample, 18,247 cases were present in both prediction sub-samples; 4,620 cases were present only in the psychological ratings sub-sample; 18,029 cases were present only in the behavioral problems sub-sample; and 9,592 cases were not present in either prediction sub-sample.

There are various reasons for the lack of complete overlap among the sub-samples shown in Table 11 . Most of the 18,029 cases that were present only in the behavioral problems sub-sample were screened out of the application process, primarily because of background problems, before the psychological interview was conducted. Most of the 4,620 cases that were present only in the psychological ratings sub-sample were tested before the Personal History Questionnaire was developed. (The current psychological rating system was introduced in 1985, while the Personal History Questionnaire was not introduced until 1989.) Most of the 9,592 applicants who were not present in either prediction sub-sample were tested before 1989; that is, before either the psychological rating system or the Personal History Questionnaire were introduced.

Table 12 compares the characteristics of the two prediction sub-samples (as well as the total job applicant sample) with respect to gender, ethnic group, and test date. As the table indicates, the two sub-samples have nearly identical distributions with respect to gender and ethnic group.

Table 11

Incidence Of PHQ And Psychological Evaluation Data In The Public Safety Job Applicant Normative Sample

	PHQ Data		
Psychological Evaluation Data	No	Yes	Total
No	9,592	18,029	27,621
Yes	4,620	18,247	22,867
Total	14,212	36,276	50,488

Before conducting the analysis; both sub-samples were split randomly into two equal halves. The first half of each sub-sample was used to calibrate the prediction equations, and the second half of each sub-sample was used to cross-validate the prediction equations.

Criterion Variables

In the sub-sample containing psychological ratings, the applicants received a complete psychological evaluation. Typically, this evaluation included the CPI, either the MMPI-2 (from 1989 to 1997) or PAI (from1995 to the present), the STAXI, the Johnson, Roberts Personal History Questionnaire, and a structured interview. Based on this information, the applicants were assigned by the evaluating psychologist to one of five suitability categories (A, B, C, D, or F). For purposes of the prediction used in this CPI report (and for certain screening purposes), these categories were combined into two broader categories: "suitable" (i.e., ratings of A, B, and C) and "poorly suited" (i.e., ratings of D and F).

Roberts and colleagues have conducted several longitudinal studies to examine the predictive accuracy of these psychological ratings when made by psychologists who were trained in the use of the rating system (Johnson, Roberts & Benner, 1991, 1996; Zwemke, Johnson, & Roberts, 1990). The data indicated that "poorly suited" (i.e., D-rated) applicants who were subsequently hired as police officers were almost twice as likely to fail during probation as applicants rated "suitable" (i.e., rated A, B, or C). Additionally, D-rated applicants who were hired and completed the probationary year were three times as likely to be terminated for cause and, in a second study, twice as likely to have significant disciplinary records. Based on a review of these data and negative experience with D-rated applicants who were hired, many of the senior author's client agencies have instituted a policy of not hiring D-rated applicants, or doing so rarely and only when the background and polygraph exams do not corroborate the psychological concerns.

In the subsample containing PHQ data, applicants completed the CPI and the Johnson, Roberts, & Associates Personal History Questionnaire along with the rest of the applicant testing protocol. As previously described in this chapter, the Johnson, Roberts Personal History Questionnaire contains approximately 300 questions covering various job-relevant aspects of an applicant's background, including education, employment, military experience, law enforcement experience, driving record, financial history, criminal record, substance use, and general information. It is important to note that admissions of negative behavior on the PHQ were more likely than would be expected in a typical job applicant setting, because of the threat of verification through the polygraph and background investigation.

Table 12

Characteristics Of Public Safety Job Applicants For Whom PHQ and Psychological Evaluation Data Is Available

	PHQ Data Available (N = 36,276)	Psychological Evaluation Data Available (N = 22,867)
Gender		
% Male	80	82
% Female	20	18
% Missing	*	*
Ethnicity		
% Caucasian (Non-Hispanic)	62	62
% African American	15	17
% Hispanic	12	13
% Asian/Pacific Islander	8	5
% Native American	1	1
% Other	2	1
% Missing/No Answer	0	0
Test Year		
% Before 1990	1	10
% 1990-1994	36	13
% 1995-1999	64	77

Note: Values represent percentages of those who have each type of data.

Using the data from the PHQ, six composite problem variables were formed, reflecting job-relevant problems in the following areas: Job Performance, Integrity, Anger Management, Alcohol Use, Illegal Drug Use, And Substance Abuse. Each composite variable was based on a number of individual questions. For each of these individual PHQ questions, endorsements of one or more of the available response options were identified as "problem" responses (i.e., they were judged to represent a serious behavioral admission for a public safety applicant). For example, one of the questions on which the Job-related problems variable was based was "Have you ever been fired from any employment?" For this question, endorsing the response that indicated the applicant was fired "two or more times" was regarded as a problem response. Table 9 (in Chapter 3) summarizes the set of responses that were used as indicators of a problem. For each of the six composite problem variables, the table presents the PHQ item numbers and responses on which the composite problem variable was based.

Each of the composite problem variables was assigned one of two values: 1 (problem) or 0 (non-problem). A composite problem variable was assigned a value of 1 (problem) if an applicant responded to any of the questions on which the composite problem variable is based in

a manner that indicated "problematic" behavior. For example, the composite variable reflecting Anger Management problems is based on the following sets of problem responses: (a) has slapped or punched a romantic partner one or more times; (b) had one or more personal fights since age 18; (c) had one or more fights after consuming alcohol; (d) had two or more arguments at work where voice was raised or profanity was used; and (e) was arrested for, or admits committing, assault on another person. If an applicant's answers to the PHQ included any of the above responses, he or she would be regarded as having a problem with respect to the composite variable, Anger Management.

Table 9 presents, for each of the six composite problem variables, the percentage of applicants who endorsed each of the responses making up that composite variable at or above the cutoff level (e.g., is late to work *once a month or more*). Table 9 also presents, for each of the composite variables, the base rate of applicants who reported at least one item for that variable. For example, 38% of the applicant normative sample endorsed one or more items included in the Job Performance composite variable.

Prediction Models

For each of the predictions made in this CPI Public Safety Screening Report (i.e., the prediction of a "poorly suited" psychological rating and the predictions of the six composite problem variables), the form of the prediction equations is the same; that is, a dichotomous (1,0) criterion variable is being predicted from a set of continuous predictor variables (i.e., the CPI scale scores). Logistic regression analysis (Hosmer & Lemeshow, 1989) was used to create all of the prediction equations. In each case, a stepwise procedure was conducted to select predictor variables from a larger pool of potential variables and to assign regression weights. The specific algorithm used was the SPSS Logistic Regression Analysis procedure (Norusis, 1997). A separate prediction equation was developed for each of the criterion variables.

Table 13 shows the goodness of fit statistics from the calculations that were performed to calibrate the prediction formulas. Two goodness of fit statistics are shown in the table: a correlation coefficient and the percentage correctly classified. The correlation coefficients are Pearson product moment correlation coefficients between (a) scores on the observed value of the dichotomous criterion variable (i.e., problem versus no problem, suitable versus poorly suited) and (b) the predicted value of the criterion variable based on the logistic regression equation. The percentage correctly classified statistics reflect the percentage of cases correctly classified on the criterion variable (problem/no problem), based on the predicted value from the logistic regression equation. (Note: For assigning cases to problem or no problem outcomes, based on the prediction equation, the cutoff values were set so that the proportions of the predicted values assigned to each outcome agreed with the proportions of the observed values assigned to each outcome. For example, if 66% of the cases were observed to have problem scores for a particular criterion variable, the cutoff value for the prediction equation was set so that the highest 66% of predicted values were assigned to the problem category.)

Table 13 indicates that the calibration formulas were successful in predicting the criterion variables. The equation predicting the outcome of the psychological suitability rating had a correlation coefficient of .38 and correctly classified 76% of the cases in the sample. The equations predicting the various composite problem variables had correlation coefficients ranging from .25 to .38 and correct classification rates ranging from 64% to 82%.

Cross-Validation Analysis

The goodness of fit statistics computed to measure of the accuracy of the prediction formulas were based on the same samples of data that were used to calibrate the prediction formulas. These goodness of fit statistics could be misleading. Whenever a prediction formula is calibrated on a particular set of data, there is a possibility that the formula will be tailored to the

idiosyncrasies of that data set in a way that will not be replicated in other data sets. In order to investigate how well a prediction formula will predict in the future, it needs to be cross-validated by testing the prediction formula in a new data set that was not used in the calibration of the formula. For these reasons, a cross-validation analysis was performed to test the goodness of fit of the CPI prediction equations in new data sets. As discussed above, the subsamples used for the prediction analyses were randomly split into two halves, with one half being used for calibration and the other half used for cross-validation.

Table 13

Measures Of Goodness Of Fit For Equations Predicting Problem Variables From CPI Scale Scores

	r		% correctly classified	
Problem	Calibration	Cross-validation	Calibration	Cross-validation
Fail Psychological Evaluation [a]	.38	.37	76	75
Substance Abuse [b]	.29	.28	66	66
Illegal Drug Use [b]	.25	.23	82	82
Alcohol Use [b]	.25	.25	78	79
Anger Management [b]	.32	.32	66	66
Integrity [b]	.38	.35	74	74
Job Performance [b]	.27	.28	64	64

[a] Sample size = 22,867. [b] Sample size = 36,276.

Table 13 also presents the goodness of fit statistics for the cross-validation analyses. As the table shows, there was no appreciable reduction in the goodness of fit statistics when the prediction formulas were applied in the new, cross-validation sample. Specifically, for predicting psychological suitability, the correlation coefficient was .38 in the calibration sample and .37 in the cross-validation sample. The percentage of correct classifications was 66% in the calibration sample and 66% in the cross-validation sample. For predicting the composite problem variables, the largest drop in correlation coefficients between the calibration and cross-validation samples was .03 (i.e., from .38 to .35) for "Integrity Problems." For all six of the problem variables, the percentage of correct classifications was the same in the cross-validation sample as it was in the calibration sample.

The results of the cross-validation analysis demonstrate that the prediction formulas used in the CPI Public Safety Screening Report accurately predict the outcome of psychological screening and self-reported negative behaviors, even when the formulas are applied to new samples of screening data that were not involved in calibrating the formulas. This finding should increase confidence that the formulas will continue to provide valid predictions when they are used for new groups of public safety job applicants.

Comparisons Of The Predictive Ability Of The CPI And Other Tests

A series of analyses were done to compare how well the problem criteria examined in the CPI Police and Public Safety Report -- namely the outcome of the psychological evaluation and

the six behavioral measures based on the Personal History Questionnaire -- could be predicted by the CPI and two other tests commonly used in public safety selection, the MMPI-2 and PAI. A sub-sample of 4,329 public safety applicants was selected, each of whom had completed all three tests -- the CPI, MMPI-2 and PAI -- as part of the job application process, and had also completed the Personal History Questionnaire and received a psychological evaluation. (Note: 214 cases in the sample had received "non-standard" psychological evaluations, other than letter grades of A through F. These cases were not included in the analysis that was done to predict the outcome of the psychological evaluations.)

Logistic regression analysis was used to predict each of the criterion measures using scales of each of the three tests separately, then the CPI paired with each other test, and finally, all three tests together. Table 14 contains correlation coefficients from these analyses. The MMPI scales used were the standard K corrected scales that are typically used by screening psychologists; special research scales, such as the McAndrews Alcoholism scale or the Addiction Potential scale, were not included.

Table 14

Correlation Coefficients Reflecting The Ability Of CPI, PAI, And Basic MMPI2 Scale Scores To Predict Problem Criteria

	Source Of Predictor Variables					
Problem	CPI Only	MMPI2 Only	PAI Only	CPI + MMPI2	CPI + PAI	CPI, PAI + MMPI2
Fail Psychological Evaluation [a]	.40	.38	.45	.42	.47	.48
Substance Abuse [b]	.27	.26	.36	.30	.38	.39
Illegal Drug Use [b]	.21	.22	.32	.22	.33	.34
Alcohol Use [b]	.28	.27	.41	.31	.43	.45
Anger Management [b]	.33	.33	.38	.36	.40	.41
Integrity [b]	.36	.33	.45	.40	.49	.50
Job Performance [b]	.29	.28	.31	.31	.33	.33

[a] Sample size = 4,115. [b] Sample size = 4,329

As Table 14 indicates, the correlations for the MMPI-2 were about the same as the correlations for the CPI, while the correlations for the PAI were higher. The correlations for the CPI and MMPI-2 combined were slightly higher than the correlations for the CPI alone, while the correlations for the CPI and PAI together were substantially higher than the correlations for the CPI alone. The correlations for all three tests combined were slightly higher than the correlations for the CPI and PAI combined, and substantially higher than the correlations for the CPI and MMPI-2 combined.

Typically, the psychological testing of public safety applicants involves a test of "normal" traits, such as the CPI, plus a test intended to identify psychopathology, such as the PAI or MMPI-2. The results in Table 14 suggest that although the CPI alone accounts for a considerable amount of the variance measured by psychological tests, both the PAI and the MMPI-2 do enhance the ability of the CPI to predict the criterion measures investigated. The improvement provided by the PAI is more substantial than the improvement provided by the MMPI.

Chapter 5

Future Upgrades

The CPI Law Enforcement, Corrections, and Public Safety Screening Report was designed to assist psychologists in going beyond the minimum objective of emotional stability certification when screening public safety applicants. To that end, the senior author and his colleagues have focused on providing special report features that guide the psychologist toward job-relevant issues and presenting normative and validity data from actual screening programs that will help to support the final recommendation.

The authors intend to provide future updates that will continually expand the value of this report for the screening psychologist. For example, the authors would like to include larger normative samples of hired, post-probation employees in each job category and also add a new profile for probation department juvenile counselors. A second goal would be to gather anonymous and confidential ratings of the current cohort of hired public safety officers on "essential job functions" and incorporate the results into this special CPI report. Several years from now, the existing cohort of hired public safety officers will have achieved sufficient tenure to provide adequate samples of "promoted," "current-in-good standing," and "terminated" subgroups. These different employment outcomes will form the basis of future prediction equations that will further enhance the value of this report.

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Appendix A

Case Study Interpretive Example

The following case example was evaluated using a comprehensive test battery including the MMPI, STAXI, Life History Questionnaire and CPI (which was administered prior to the development of the Police and Public Safety Selection Report). This case was drawn from the senior author's archives of terminated officers because it demonstrates the value of the additional information that is provided by the features of the CPI Police and Public Safety Selection Report.

The original CPI data was re-scored using the CPI Police and Public Safety Selection Report software for purposes of this illustration. A copy of the report that was generated is contained in Appendix B of this manual. Demographic information has been modified to preserve anonymity.

Case Summary

After completing a pre-employment psychological screening, the examiner recommended that the Case Example applicant not be hired, assigning a rating of Category D, Poorly Suited. The police agency hired the applicant despite the negative recommendation because the psychologist's concerns were limited to job suitability issues that the hiring authority believed could be remediated during the academy. Also, the applicant had passed the background and polygraph examination.

While in the police academy the Case Example individual fell asleep in class several times. She was required to submit to medical and urinalysis examination, was found to be under the influence of cocaine, and was fired.

This case was extracted from the primary author's archives to illustrate how the features of the CPI Police and Public Safety Selection Report could have helped the psychologist identify test-based concerns that were linked to the eventual reasons for termination, rather than the job function concerns that were the basis of the negative recommendation.

Initial Evaluation

The applicant applied for the job as a police officer with a major metropolitan agency at the age of 28, in the mid 1980's. She was evaluated using the CPI, MMPI, an automated Life History Questionnaire and other inventories, plus a 40 minute face-to-face clinical interview.

The examination revealed that the applicant grew up as the oldest of several children in a family headed by her biological mother and stepfather. She denied unusual or traumatic events occurring in her developmental history, although she did require speech therapy for a stuttering problem during grammar school. She completed high school and three to four years of college with a 3.0 grade point average.

She worked part time after high school as an instructional aide, and was a loader with a mail delivery company until being hired by the police department. She initially claimed she had never been fired or forced to resign from any job, and had no disciplinary history at work. She reported that she had never been a regular consumer of alcohol, and had never had alcohol related problems. She denied the use of illegal or controlled drugs at any time in her life, and this claim was consistent with background and polygraph results. She reported a satisfactory financial history, and said she had never been arrested. Her driving record included no citations or accidents in the past three years.

During the interview with the psychologist, she demonstrated above average interpersonal skill. However, during the interview the applicant disclosed that several years earlier she had applied to the same police agency and was hired, but failed the emergency vehicle operation course during the academy.

A review of the applicant's psychological test profiles did not give evidence of any job relevant psychopathology. In fact, her test scores were all within normal limits on both the MMPI and CPI. The most notable feature of the testing protocol was an elevated Ma score on the MMPI (T = 68), and moderately low scores on the CPI So (T = 43) and To (T = 38). Given previous research indicating a higher risk for police vehicle accidents with elevations of Ma (Snibbe, et. al., 1978) and the applicant's prior failure during pursuit driving training, the psychologist concluded that the applicant was poorly suited because she was at risk of developing problems coping with high stress situations such as pursuit driving, control of conflict, and geographic orientation. Although the applicant met emotional stability standards, she was not recommended for hire because of these job suitability concerns.

Analysis of the CPI Police and Public Safety Selection Report

As discussed above, a CPI Police and Public Safety Selection Report was generated for the Case Study applicant, using the CPI data collected at the time of the original application. The complete report is exhibited in Appendix A. The rest of this section discusses the information provided in this report, and its implications.

Profile Validity

Following the guidelines discussed in this manual, it is clear that this is a valid CPI profile. There are no omitted items, the Good Impression scale is at an average level compared to community norms but low compared to public safety job incumbent norms, and the Communality scale is at a modal level using both community and public safety job incumbent norms.

General CPI Results

The Type and Level summary indicates that the applicant was placed in the Alpha Type, which is generally a positive indicator; however, she was assigned to Level 4, which indicates a level of self-realization that is relatively low for a police applicant. Although 61% of the community normative population score at Level 4 or below, only 27% of public safety applicants score that low.

The Selection Relevant Item Endorsement summary indicates that the applicant endorsed 13 items with content relevant to the selection decision, which is about twice the base rate of 7. As discussed in the manual, the psychologist should examine the content of these items and selected item responses of concern should be discussed with the applicant. The individual items endorsed by this applicant will be presented and discussed below, as part of the discussion of the section of the report that lists the Selection Relevant Items.

Job Suitability Snapshot

The Job Suitability Snapshot indicated a high probability of problems in the following areas:

- Being rated poorly suited by psychologists with expertise in public safety screening: 53% (High Risk)
- Job performance: 51% (High Risk)
- Anger management: 63% (High Risk)

- Substance abuse: 52% (High Risk)
- Involuntary departure, if hired: 30% (Medium Risk)

These results suggest more fertile areas to investigate during the interview than were apparent from the sub-clinical MMPI profile, or from the very modal CPI profile that was available when the applicant was initially screened. As has been noted in the Features section of this manual, each High Risk statement should lead to a detailed review of the individual behaviors that make up each composite criterion. If this report had been available to the interviewer, a careful questioning of the applicant about behaviors such as spouse abuse, illegal drug use, and job performance problems may have provided insights that were not otherwise available. Even if an applicant denies the behaviors described by the risk statements, the prudent course is to advise the hiring authority to rule out negative behavior in these areas during the polygraph and background.

Applicant Comparison Profile #1

The first applicant comparison profile indicates how the applicant's scores on the CPI scales compare to two different normative groups: (1) the CPI general community normative sample (dotted line); and (2) the public safety job incumbent normative sample, based on applicants who were hired, completed the probationary year of employment, and served as successful police officers (solid line).

The CPI community normative profile for this applicant indicates no significant concerns; however, the profile created by comparing this applicant to public safety job incumbent norms indicates that the applicant is notably different from incumbent officers on a number of scales. Of particular concern are the applicant's low scores on Self Control (T = 20), Good Impression (T = 29), and Socialization (T = 31). This pattern of very low scores suggests that the interviewer should thoroughly inquire about violations of normative behavior during the interview, because of the greater likelihood of problem behaviors by applicants with such low scores.

Applicant Comparison Profile # 2

The second applicant comparison profile presents the applicant's scores on the CPI scales compared to two different normative groups of applicants to the same job classification: (1) all applicants for the same job classification regardless of sex or ethnic group (solid line); and (2) applicants for the same job classification, of the same sex and ethnic group as the applicant. This comparison profile permits the psychologist to address any T score discrepancies that may have been due in part to cultural or subgroup variations.

The applicant's profiles are almost identical on both sets of applicant norms, suggesting that any unusual T scores are reflections of differences on the underlying constructs and behaviors rather than extraneous factors such as gender or cultural differences.

Applicant Type and Level Classification

The applicant type and level classification provides a graphic display of the applicant's Type rating that charts their scores on each of the two vector scales (v.1 and v.2). The applicant's position in the Type quadrant helps the examiner understand whether they are prototypic, or are on the borderline of two different types. The graph on the left uses the CPI community norms to determine Type, and the graph on the right uses incumbent officer norms.

The report classifies the applicant as type Alpha, Level 4. About 73% of applicants are at Levels 5-7, suggesting a much higher degree of self-realization than the applicant. It is noteworthy that three fourths of post probationary officers at Level 4 or below were subsequently

rated as problem officers by sergeants who knew them well. When compared to police norms for Type classification, the Case Example applicant remained an Alpha.

CPI Special Purpose Scales

This section of the report lists some of the most useful supplemental scales developed from the CPI item set. Similar to the presentation on the Applicant Comparison Profile # 1, the applicant's raw score on each special purpose scale is followed by her T scores based upon (a) community norms; and (b) incumbent officer norms. The T scores in the right hand column of the page (Incumbent T scores) along with the Scale acronym and description are printed in boldface font when the T value =< 40, or => 65. Significant departures from average scores merit interview discussion of potential problem behaviors suggested by the scores.

The applicant produced notably high scores on the following scales: Narcissistic Personality and Hostility. She produced low scores on the following scales: Managerial Potential, Work Orientation, Amicability, Socialization subscales 1 (optimism) and 3 (good memories of home and parents), and Integrity. These Special Purpose scales suggest that she is likely to be perceived by others as self-centered, not a team player, and lacking in motivation. Further, she may display behavior described by others as unfriendly, morose, negative, and possibly hostile. Finally, the applicant scored notably low on the Integrity scale, suggesting that she may have lied about recent illegal use of drugs.

Selection-Relevant CPI Items

This page of the report lists items the applicant has endorsed that have been judged to have content that may be relevant to the selection decision. Most of the items printed in this section of the Report were only endorsed by a small percent of the total applicant pool. The actual percent of the applicant pool endorsing an item is indicated as a percentage inside parentheses at the end of the printed item statement.

The Case Example applicant endorsed the following unusual items that would merit discussion during the interview:

- 183: Sometimes I feel as if I must injure either myself or someone else (T-0%)
- 187: I am inclined to take things too hard (T-9%)
- 276: I have very few quarrels with members of my own family (F-7%)
- 374: I would never go out of my way to help another person if it meant giving up some personal pleasure (T-1%)

The content of the applicant's item endorsements reflect a level of personal distress that was not admitted to the psychologist when her developmental history and pattern of current relationships were reviewed. Also, the self-centeredness reflected in item 374 raises a question about her motivation to seek public service employment. Although the item content offered no direct linkage to the illegal drug use that resulted in her termination, it is possible that discussion of these item responses would have helped the psychologist gain a more accurate view of the applicant's suitability for a law enforcement position.

This item level data has not been available in previous CPI reports. It is our experience that applicants are more forthcoming when responding to CPI items than when answering personal questions from a job interviewer, so it is very helpful to use endorsements of items with job relevant content as discussion points during the interview.

(Note: It is advisable not to dismiss the importance of endorsed items that the applicant claims are " mistakes" when asked for clarification by the psychologist. Although mismarks do

occur, most endorsements of critical items reflect important information about the applicant, or that they have a careless approach to the testing situation.)

Indicators of Essential Job Functions and Job Performance Problems for Police Officer Applicants

The information on this page of the report identifies test results that are associated with either favorable or unfavorable supervisory ratings on (a) job functions that are considered essential for success as a sworn weapon carrying officer, and (b) potential job performance problems. In actual use during a selection interview, a summary of CPI scales that are significantly correlated to each criterion rating are printed if the applicant's scores on those scales were notably high or low in the relevant direction. The number of positive indicators should generally be higher than the number of negative indicators.

The Case Example applicant had no favorable indicators and 43 unfavorable indicators. Most of the results in this automated summary are logical and easily understood. For example, her low scores on the scales for Self Control, Good Impression, Narcissism, Work Orientation, and Amicability, together with her high score on the Hostility scale, are reported as Unfavorable Indicators for the job function "Relations with Citizens."

Once again, had this information been available for the Case Example applicant at the time she was screened, the focus of the negative psychological recommendation would not have been on the narrowly defined driving and high stress problems. Examination of the subset of Unfavorable Indicators for Job Problems suggests a concern regarding her potential Unethical Behavior. And the summary of favorable and unfavorable indicators portrays the applicant as likely to perform poorly as an officer. More significantly, the focus of concern from the unfavorable indicators was her anticipated poor performance in relation to citizens and co-workers, and anticipated unethical behavior (although not identifying a specific likelihood of illegal drug use). Since the applicant was terminated before being assigned to the field, we do not know how accurate this prediction of interpersonal skill problems was.

Summary

Retrospectively, an examination of the applicant's CPI data, when rescored using the CPI Police and Public Safety Selection Report software, reveals a number of indicators that the examining psychologist could have used to substantiate a negative suitability recommendation, which would have been a more accurate forecast of the reason for the applicant's eventual termination than the reason that was given based on the more limited CPI data available at the time of the application.